

Remarks

Applicant has received and carefully reviewed the Office Action mailed March 31, 2003. With the above amendments, claims 1-28 and 30-32 remain pending, with claims 30-32 being newly presented. Reexamination and reconsideration are respectfully requested.

Applicant's representative would like to thank the Examiner for the courtesies extended in the telephone interview of June 4, 2003. It was agreed that Applicant would treat the claim objections with respect to claims 1 and 24 stated in the Office Action as claim rejections under either 35 U.S.C. §102 or §103.

On page 2 of the Office Action, the Examiner rejected claims 28-29 under 35 U.S.C. §102(e) as being anticipated by McLain et al. (U.S. Patent Application Pub. No. 2002/0144272). After careful review of McLain et al., and without admitting that the disclosure of McLain et al. is prior art, Applicant must respectfully disagree.

The Examiner states that McLain et al. "teach a method to determine a global position of an object comprising of receiving from a plurality of local systems, data on the most likely position of the object. (see figure 1)." After careful review, however, McLain et al. do not appear to determine a global position of an object by receiving from a plurality of local systems data on the most likely position of the object as claimed.

Briefly, McLain et al. suggest methods for controlling the radiated power emissions of a broadband data system to prevent interference with other systems. The aim appears to be to achieve a system that can maximize the power output (and hence maximize data transmission speed) without violating the rules of regulatory agencies for wireless communications. Referring to FIG. 1, McLain et al. state "[t]he system 10 generally comprises a ground segment 16, a plurality of satellites 18a-18f forming a space segment 17, and a mobile system 20 disposed on each moving platform 12." (McLain et al., at paragraph 19). Data, such as Internet service or television programming, is to be transmitted from the ground to the airplanes (the moving platforms 12) via the satellite network. Included in the system is the capacity for data to be transmitted from the airplanes to the ground via the satellites.

It is unclear what part(s) of McLain et al. correspond to the “local systems” recited in claim 28. It does not seem that the airplanes can be considered the local systems of claim 28, because nothing appears to receive data on the most likely position of AN object from a plurality of airplanes. Likewise, it does not seem that the satellites can be considered the local systems of claim 28 because nothing appears to receive data on the most likely position of AN object from a plurality of satellites.

Instead, it appears that an initial estimated target vector between an airplane and a satellite is determined by knowing the location of the satellites, and then using the navigational system of the airplane to determine a current location of the airplane, and then determining a vector from the current location of the airplane to the known location of the satellite. To establish a more accurate target vector, McLain et al. appear to use a signal strength measurement technique. For example, McLain et al. state:

[0038] During normal operation, the receive antenna 82 dwells at a predetermined number of points, such as five points (sequential lobing) about the estimated vector between the mobile platform 20 and the satellite 18 and using the strength measurements of the forward link F for each of these points, a true satellite vector is calculated. The receive antenna 82 preferably performs this operation about 50 times per second and can accurately point to the satellite 18 even during extreme movements of the mobile platform 20.

(Emphasis Added)(McLain et al., at paragraph 38). In view of the foregoing, Applicant does not see how McLain et al. discloses or suggests a method for determining a global position of an object that includes the step of receiving from a plurality of local systems, data on the most likely position of the object, as recited in claim 28.

Despite the foregoing, Applicant has made some clarifying amendments to claim 28. Claim 28, as amended, now recites:

28. (Currently Amended) A method to determine a most likely global position of an object, said method comprising the steps of receiving from a plurality of local systems; data on the most likely position of the object; and combining the data from the plurality of local systems to generate a value indicative of the most likely global position of the object.

As noted above, nothing in McLain et al. appears to suggest the step of receiving from a plurality of local systems, data on the most likely position of the object. In addition, nothing in McLain et al. appears to suggest the step of combining the data from the

plurality of local systems to generate a value indicative of the most likely global position of the object. As such, independent claim 28 is believed to be clearly patentable over McLain et al. For similar and other reasons, dependent claim 29 is also believed to be clearly patentable over McLain et al.

On page 2 of the Office Action, the Examiner objected to claim 1, stating:

Lemelson et al. (USPN 6,084,510) teaches a system to determine the position of an object comprising a plurality of sensors (82; see figure 7) (figure 1), a data processor for combining the location data to generate a value indicative of the location (see figure 8).

As noted above, in order to expedite prosecution of the present application, Applicant has agreed to respond to the stated objection as if it were a rejection under 35 U.S.C. §102 or §103. Claim 1 recites:

1. A system to determine a most likely position of an object, said system comprising:
 - a plurality of sensors each providing a location of the object with an associated sensor uncertainty distribution; and
 - a data processor for combining the location data from selected sensors and the associated sensor uncertainty distributions to generate a value indicative of the most likely position of the object.

After careful review, Lemelson et al. appear to determine the location of objects through the use of GPS. The Examiner cites to reference numeral 82 of Figure 7 as corresponding to the plurality of sensors. Figure 7 is a block diagram of a warning device 11. A warning device 11 is also shown in Figure 1, as noted by the Examiner. Reference numeral 82 of Figure 7 corresponds to a GPS receiver in the warning device. As Lemelson et al. explain with reference to Figure 1:

The warning device 11, 11a, 17a, 17b includes a GPS receiver capability for receiving GPS location signals 28, 28a, 28b from multiple GPS satellites 6. As is well known in the art, such signals enable precise location calculation for the warning device 11 any place on the earth using the principles of triangulation based on the receipt of signals from multiple GPS satellites. GPS satellites 6 also transmit signals 26, 26a, 30, 30a to the airborne 8, 10 and ground based mobile 12, 14 surveillance units for use in locating these units in the overall danger warning and emergency response systems and methods of the present inventions. The surveillance platforms having GPS receivers onboard can transmit the results of their surveillance using their own GPS coordinates if they are experiencing or close aboard the danger themselves. Otherwise, their own GPS

coordinates may be used as a basis for estimating the GPS coordinates of the danger when the danger is laterally offset from the present position of the reporting surveillance platform.

(Emphasis Added)(Lemelson et al., column 9, lines 40-58). Since each warning device of Lemelson et al. appears to only include one GPS receiver (see Lemelson et al., Figure 7), it does not appear that the warning device includes “a plurality of sensors each providing a location of the object”, as recited in claim 1. Further, it does not appear that the warning device of Lemelson et al. provides a plurality of sensors, where each sensor provides a location of the object “with an associated sensor uncertainty distribution”, as recited in claim 1. Nothing in Lemelson et al. mentions an associated sensor uncertainty distribution. Further, it does not appear that Lemelson et al. discloses or suggests a data processor for combining the location data from selected sensors and the associated sensor uncertainty distributions to generate a value indicative of the most likely position of the object, as recited in claim 1. For these and other reasons, claim 1 is believed to be clearly patentable over Lemelson et al. For similar and other reasons, dependent claims 2-23 are also believed to be clearly patentable over Lemelson et al.

On page 3 of the Office Action, the Examiner objected to claim 24 in view of Faivre et al. (U.S. Patent No. 5,661,486). As noted above, in order to expedite prosecution of the present application, Applicant has agreed to respond to the stated objection as if it were a rejection under 35 U.S.C. §102 or §103. Claim 24 has been amended to include several clarifying amendments, and now recites:

24. (Currently Amended) A method ~~to determine for determining~~ a most likely position of an object, said method comprising:
receiving location data and an uncertainty distributions for the object from each of a plurality of sensors;
combining the location data and the uncertainty distributions to generate a value indicative of the most likely position of the object; and
combining the location data and the uncertainty distributions to generate a probability distribution for the most likely position of the object.

After careful review, Applicant must respectfully disagree that claim 24 is anticipated or rendered obvious in view of Faivre et al. The Examiner cites to reference numerals 2 and 5 of Figure 1 of Faivre et al. as corresponding to the “plurality of sensors” of claim 24.

However, the sensors 2 of Faivre et al. do not appear to provide location data as well as have an uncertainty distribution, as recited in claim 24. With respect to the sensors 2, Faivre et al. state “[t]he sensor 2 is, for example, constituted by the weather radar of the aircraft, a millimeter band radar and an on-board infra-red sensor. There is no indication that any of these “sensors” provide or have an uncertainty distribution, as recited in claim 24. During use, and with reference to Figure 2, Faivre et al. state:

FIG. 2 shows an example of an application of a device according to the invention. An aircraft 21 fitted with such a device and approaching an airport detects via his sensor(s) 2, three objects 22, 23 and 24 which are for example a tower 22 near the airport, a runway 23 of the airport, for example the one on which the aircraft is to land, and a highway 24 near the airport. Once the sensor 2 has picked up the signatures of these three singular points 22, 23 and 24, they are compared with those in the database. The exact position of the sensor 2, and thus the aircraft 21, is then computed by triangulation, using the exact positions of these objects obtained from the database 1.

(Faivre et al., column 2, lines 54-65). Thus, the “sensors” provide a relative position of the three objects 22, 23 and 24, which have known locations, and then through triangulation the position of the aircraft 21 is computed. Again, there is no indication whatsoever of receiving location data and an uncertainty distribution for the object from each of a plurality of sensors, as recited in claim 24. In addition, there does not appear to be any indication whatsoever of combining the location data and the uncertainty distributions to generate a value indicative of the most likely position of the object, or combining the location data and the uncertainty distributions to generate a probability distribution for the most likely position of the object, as recited in claim 24. In view thereof, claim 24 is believed to be clearly patentable over Faivre et al. For similar and other reasons, dependent claims 25-27 are also believed to be clearly patentable over Faivre et al.

Applicant has added newly presented claims 30-32. For similar reasons to those given above, as well as other reasons, newly presented claims 30-32 are also believed to be clearly patentable over the cited prior art.

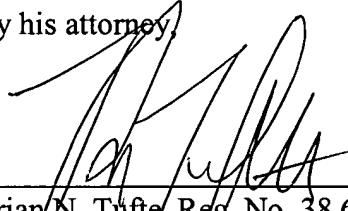
In view of the foregoing, it is believed that all pending claims 1-28 and 30-32 are in condition for allowance. Issuance of a notice of allowance in due course is

respectfully requested. If a telephone conference would be of assistance, please contact the undersigned attorney at 612-677-9050.

Respectfully submitted,

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By his attorney,

A handwritten signature in black ink, appearing to read 'Brian N. Tufte', written over a horizontal line.

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